

Searching Authority, the Applicants are enclosing i) another PTO Form 1449 identifying the publication date of the *Motamedi et al.* reference, and ii) a date stamped copy of the reference. It is respectfully requested that the reference listed in the PTO Form 1449 be fully considered and listed on any patent resulting from the pending application.

Claim 24 stands objected to under 37 CFR 1.75(c) as being of improper dependent form. In particular, the Examiner asserts that by permitting one element to form another element in a combination, the combination is reduced to two elements and thus does not include every limitation of the parent claim. Respectfully, claim 19 recites a protective window and an optical imaging system. Claim 24, as originally presented, recited that the optical imaging system forms the protective window. This does not result in the elimination of an element -- claim 24 as originally presented, still required both the optical system and the protective window; claim 24, however, further recited that the recited optical system is both -- i.e., both an optical imaging system and a protective window.

Claims 19-36 stand rejected under 35 U.S.C. §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The Office Action asserts that the terms "micromechanically producible" (claim 19) and "micromechanical fashion" (claim 36) render the claims indefinite. Claim 19 has been amended to recite a micromechanical optical imaging system (rather than a micromechanically producible optical imaging system). Claim 36 has been amended to recite "monolithically producing a micromechanical optical imaging system." As described in the Specification, for example, the entire apparatus 1 of Fig. 3 may be constructed monolithically on a substrate. In one embodiment, the cavity 8 is configured after production of the membrane. This can be done by etching, for example.

In view of the foregoing, the rejection of claims 19-36 under 35 U.S.C. § 112, second paragraph, should be withdrawn.

Claims 19, 21, 22, 25, 26, 29, and 31 stand rejected under 35 U.S.C. §102(e) as being anticipated by United States Patent No. 5,701,008 to Ray et al. ("the Ray reference"). It is respectfully submitted that the Ray reference does not anticipate any of claims 19, 21, 22, 25, 26, 29 and 31, for at least the following reasons.

To reject a claim under 35 U.S.C. §102, the Office must demonstrate that each and every limitation is identically disclosed in a single prior art reference. *See Scripps Clinic & Research Foundation v. Genentech, Inc.*, 18 U.S.P.Q.2d 1001, 1010 (Fed.Cir. 1991). "The

identical invention must be shown in as complete detail as is contained in the claim." M.P.E.P. §2131.

Claim 19 recites the following:

... a micromechanical optical imaging system including a lens configured to form an image of a subject to be imaged onto a plane of the detector structure, the lens having a convexity on a side facing away from the detector structure . . . .

The Ray reference does not disclose or even suggest an optical imaging system including a lens having a convexity (i.e., convex surface) facing away from the detector structure. Instead, the Ray reference describes "the microlenses are etched into the interior IR window surface facing the detector array." (Ray, col. 2, ll. 22-25). Since, the Ray reference does not disclose a lens having a convexity on a side facing away from the detector, the Ray reference does not anticipate independent Claim 19 or dependent Claims 21, 22, 25, 26, 29 and 31. It is, therefore, respectfully requested that this rejection be withdrawn.

Claims 23, 30 and 34 stand rejected under 35 U.S.C. §103(a) as being unpatentable over the Ray reference. As discussed above in connection with claim 19, the Ray reference does not even suggest an optical imaging system including a lens having a convexity facing away from the detector structure. For at least this reason, the Ray reference does not render obvious any of claims 23, 30 and 34.

Claims 27 and 28 stand rejected under 35 U.S.C. §103(a) as being unpatentable over the Ray reference in view of United States Patent No. 4,675,525 to Amingual et al. ("the Amingual reference"). Claims 27 and 28 depend from Claim 19. As discussed above, the Ray reference fails to disclose or suggest each and every element of Claim 19. The Amingual reference fails to overcome this deficiency, i.e., the Amingual reference fails to teach or suggest an optical imaging system including a lens having a convexity on a side facing away from the detector structure. Since the Ray reference and Amingual reference do not disclose or suggest each and every limitation of claim 19, these references do not render claims 27 and 28 obvious under 35 U.S.C. §103(a). It is, therefore, respectfully requested that this rejection be withdrawn.

Claims 19, 20, 29, 32, 35 and 36 stand rejected under 35 U.S.C. §103(a) as being unpatentable over United States Patent No. 5,907,151 to Gramann et al. ("the Gramann reference"). Claim 20 has been canceled, without prejudice. It is respectfully submitted that the Gramann reference does not render obvious any of claims 19, 29, 32, 35 and 36, for at least the following reasons.

Claim 19 recites the following:

. . . a micromechanical optical imaging system including a lens configured to form an image of a subject to be imaged onto a plane of the detector structure, the lens having a convexity on a side facing away from the detector structure, ***the lens being arranged relative to the detector structure so that a cavity is between the lens and the detector structure.***

The Examiner apparently relies on the radiation-emitting and/or radiation body 1 with respect to Applicants' recited detector structure, and relies on focusing means 21 as disclosing Applicants' recited lens. Respectfully, the Gramann reference does not disclose or suggest a cavity between a detector structure and a lens, as recited in claim 19. Instead, the Gramann describes that an optical coupling medium 29, such as a casting medium, is situated between the body 1 and the carrier plate 7 of the focusing means 21. (Gramann, col. 6, ll. 19-29). Since, the Gramann reference does not disclose, teach or suggest a cavity between the detector structure and the protective window, the Gramann reference does not render independent Claim 19 or dependent Claims 29, 32 and 35 obvious under 35 U.S.C. §103(a).

Claim 36 recites the following:

monolithically producing a micromechanical optical imaging system and a detector structure, a cavity being formed between the detector structure and the optical imaging system, the detector structure for sensing the electromagnetic radiation, the optical imaging system for forming an image of a subject to be imaged onto a plane of the detector structure.

It is respectfully submitted that the Gramann reference does not describe ***monolithically producing*** a micromechanical optical imaging system and a detector. In the Gramann reference, for example, body 1 is soldered to the carrier.

Moreover, as discussed above in connection with claim 19, the Gramann reference does not even suggest a cavity between the optical imaging system and the detector structure. For at least this reason, the Gramann reference does not render obvious claims 36. It is, therefore, respectfully requested that this rejection be withdrawn.

Claims 19, 20, 22, 29, 30, 31 and 33 stand rejected under 35 U.S.C. §103(a) as being unpatentable over United States Patent No. 5,401,968 to Cox ("the Cox reference"). Claim 20 has been canceled, without prejudice. The Office Action acknowledges that the Cox reference does not disclose a protective window as recited in amended Claim 19. The Office

Action then asserts:

it would have been obvious to one of ordinary skill in the art at the time the invention was made that a protective window for the detector structure 22 would be within the side of the airplane, for example, or in the housing allowing an operator to hold and manipulate the apparatus and the like.

As an initial matter, the Examiner's reference to the side of an airplane is not understood by Applicants. The Cox reference relates to a binary optical microlens detector array. The Cox reference does not mention or relate in any way to airplanes, or sides of airplanes.

Moreover, the Examiner has not identified any support for the above-cited assertion. There is no disclosure, teaching or suggestion in the Cox reference that the apparatus disclosed in its Figure 1 would include a "protective window" that "would be the side of an airplane or within some other housing allowing an operator to hold and manipulate the apparatus." Since the Cox reference does not disclose, teach or suggest a protective housing, the Cox reference does not render independent Claim 19 or dependent Claims 22, 29, 30, 31 and 33 obvious under 35 U.S.C. §103(a). It is, therefore, respectfully requested that this rejection be withdrawn.

### **CONCLUSION**

In light of the foregoing, Applicants respectfully submit that all pending claims are in condition for allowance. Prompt reconsideration and allowance of the present application are therefore earnestly solicited.

The Examiner is invited to contact the undersigned at (212)425-7200 to discuss any matter relating to this application. The Patent Office is authorized to charge any fees which may be necessary for consideration of this paper to Kenyon & Kenyon Deposit Account No. 11-0600.

Respectfully submitted,

KENYON & KENYON

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Dated: 30 April, 2003

By: *[Signature]*

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**VERSION WITH MARKINGS TO SHOW CHANGES MADE**

**In the Claims:**

Please cancel claim 20, without prejudice.

Please amend the claims as set forth below.

19. (Amended) An apparatus for sensing electromagnetic radiation, comprising:

a detector structure to sense electromagnetic radiation, the detector structure formed on a semiconductor substrate;

a protective window for the detector structure, and

a [micromechanically producible] micromechanical optical [image-producing] imaging system [forming] including a lens configured to form an image of a subject to be imaged onto a plane of the detector structure, the lens having a convexity on a side facing away from the detector structure, the lens being arranged relative to the detector structure so that a cavity is between the lens and the detector structure.

24. (Amended) [The] An apparatus for sensing electromagnetic radiation, [according to claim

19] comprising:

a detector structure to sense electromagnetic radiation, the detector structure formed on a semiconductor substrate;

a micromechanical optical imaging system including a lens configured to form an image of a subject to be imaged onto a plane of the detector structure, the lens having a convexity facing away from the detector structure, wherein the optical imaging system forms [the] a protective window for the detector structure, and wherein the lens is arranged relative to the detector structure so that a cavity is between the lens and the detector structure.

36. (Amended) A method for producing an apparatus for sensing electromagnetic radiation, comprising:

monolithically producing [an] a micromechanical optical imaging system and a detector structure[ in monolithic micromechanical fashion], a cavity being formed between the detector structure and the optical imaging system, the detector structure for sensing the electromagnetic radiation, the optical imaging system for forming an image of a subject to be imaged onto a plane of the detector structure.